

**Notice of Allowability**

Application No.

10/582,459

Examiner

GREGORY CLARK

Applicant(s)

WALLACE ET AL.

Art Unit

1786

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/30/2011.
2. ☒ The allowed claim(s) is/are 1-5,7,9,10 and 13-31.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>20110705</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other _____.   |

/GREGORY CLARK/  
Examiner, Art Unit 1786

### **DETAILED ACTION**

The examiner received a call from Ashley Pezzner on 06/28/2011 arguing that the case should be in position for allowance and the after final amendment was in response to the objected allowable subject matter of claims 28-31 which are currently written in independent form. The details of the interview can be found in the attached interview summary.

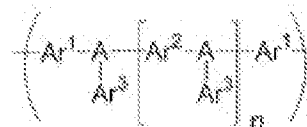
The examiner agrees with the arguments; therefore, finality has been withdrawn and the reasons for allowance are set forth below.

### **Allowable Subject Matter**

1. The following is an examiner's statement of reasons for allowance: applicant claims:

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An optionally substituted oligomer or polymer comprising a repeat unit of formula (I):



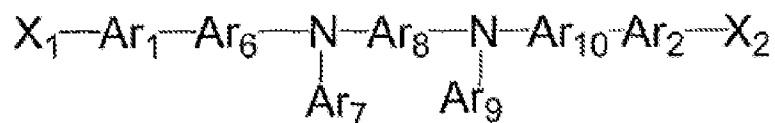
(I)

wherein  $n$  is at least 1; each  $A$  is a nitrogen atom or optionally substituted phosphorus atom; each  $\text{Ar}^1$  is the same or different and independently represents an optionally substituted arylene or heterarylene; each  $\text{Ar}^3$  is the same or different and independently represents an optionally substituted aryl or heteroaryl;  $\text{Ar}^2$  represents an optionally substituted arylene or heteroarylene comprising a linking ring to which the two atoms  $A$  are both directly linked; and at least one of  $\text{Ar}^2$ , and / or either or both of  $\text{Ar}^3$  is substituted with at least one substituent

and at least a second repeat unit,

wherein the second repeat unit is selected from optionally substituted phenyl, spirobifluorene, indenofluorene, heteroaryl or dihydrophenanthrene.

A search of the prior art did not show the claimed invention. The closest prior art appears to be Towns (WO 03/035714) who discloses an oligomeric material where the first repeat unit is represented by Formula T-1A (page 3):



wherein  $\text{X}_1$  and  $\text{X}_2$  are the same or different polymerisable groups and wherein  $\text{Ar}_1$ ,  $\text{Ar}_2$ ,  $\text{Ar}_6$ ,  $\text{Ar}_7$ ,  $\text{Ar}_8$ ,  $\text{Ar}_9$ ,  $\text{Ar}_{10}$  are the same or different substituted or unsubstituted aryl or

heteroaryl groups. Examples of groups Ar<sub>1</sub>, Ar<sub>2</sub>, Ar<sub>3</sub>, Ar<sub>4</sub>, Ar<sub>5</sub>, Ar<sub>6</sub>, Ar<sub>7</sub>, Ar<sub>8</sub>, Ar<sub>9</sub>, and Ar<sub>10</sub> include such groups as phenylene, thiophene, pyrrole, furan, pyridine and biphenylene.

The aryl or heteroaryl groups Ar<sub>3</sub>, Ar<sub>4</sub>, Ar<sub>5</sub>, Ar<sub>6</sub>, Ar<sub>7</sub>, Ar<sub>8</sub>, Ar<sub>9</sub>, and Ar<sub>10</sub> may be substituted with moieties selected from the group comprising alkyl, perfluoroalkyl, alkylaryl, arylalkyl, heteroaryl, aryl, alkoxy, aryloxy and thioalkyl. Preferred substituents are butyl and sec-butyl.

Towns Formula T-1A reads on applicant first repeat unit where Ar<sub>6</sub>/Ar<sub>8</sub> and Ar<sub>9</sub>/Ar<sub>7</sub> correspond to Ar<sub>1</sub>, Ar<sub>2</sub> and Ar<sub>3</sub> in applicants' Formula 1.

Towns teaches that the second repeat unit can be a phenyl group but fails to teach a second repeat unit composed of spirobifluorene, indenofluorene or dihydrophenanthrene.

There appears to be no reason to modify the second repeat unit of Towns to arrive at the claimed oligomer/polymer material.

2. Claims 1-5, 7, 9-10, 13-28 and 29-31 allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### Conclusion

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Chriss can be reached on (571) 272-7783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1781

GREGORY CLARK /GDC/  
Examiner  
Art Unit 1786